

FISA update on the water quality at Lagoa Rodrigo de Freitas

In 2016, the Olympic and Paralympic Games regattas will be held on Lagoa Rodrigo de Freitas in Rio de Janeiro, Brazil, as will the 2015 World Rowing Junior Championships. The Lagoa is a very well-known venue for the sport of rowing as it has hosted many important national and international regattas, the 2007 Pan Am Games regatta, the 2013 South American Championships and two Olympic qualification regattas (1996 and 2007). There are ten rowing clubs with members who row every day on the Lagoa.

The IOC's decision to attribute the 2016 Games to Rio de Janeiro brings the Olympic Games for the first time to South America and there is no doubt that the opportunity for the sport of rowing to stage the Olympic regatta in such an iconic venue in the heart of the city is fantastic promotion for rowing. FISA, the World Rowing Federation,, has been working closely with the local organisers to ensure that rowing is able to take full advantage of this opportunity including addressing any concerns that have been expressed, in particular the quality of the water in the Lagoa. Through this process, we have gained a clearer understanding of the facts so that we may give our athletes objective information.

The Lagoa water quality is tested regularly by the Rio de Janeiro environmental agency. From time to time, especially after heavy rains, levels of Escherichia coli (E. coli) and cyanobacteria can rise for up to 24 hours. Currently, E. coli (found in fresh waters) and enterococci (marine waters) remain the best available indicators of recreational water quality. The Lagoa has inflows of both sea water and fresh water.

We also understand that a strain of E. coli has been identified in the Lagoa that can cause, among other things, gastrointestinal illness. Even if it is largely transmitted through infected food sources, in rare cases it can be transmitted person-to-person (though generally from child to adult) or by swimming in a contaminated river or lake.

In addition to the testing for E. coli – usually connected with organic waste and sewage, the Rio environmental agency has conducted investigations for industrial pollution which can lead to the production of cyanobacteria and cyanotoxins. These toxicological tests on water and fish are ongoing and there have been no positive readings to date.

We are also aware that following heavy rains there is the possibility that some combined sewerage overflow may spill into the Lagoa. This very rapidly causes a depletion of oxygen in the water and it appears that this, combined with the rapid change in water temperature, was the primary cause of fish die-offs after recent heavy rains rather than the pollution itself.

To put this into context, the World Health Organisation, in its *Guidelines for Safe Recreational Water Environments: Volume 1--Coastal and Fresh Waters* (WHO, 2003a), defines recreational water activities according to their degree of water exposure. The sport of rowing falls under what is called "incidental contact" with water. Incidental contact is defined as "recreational activity in which only the limbs are regularly wetted and in which greater contact (including swallowing water) is unusual. Other incidental contact sports include sailing, canoeing and fishing." These sports are approved for the Lagoa by the Brazilian authorities.

The FISA Sports Medicine Commission has been in close contact with the Brazilian local and national health authorities in order to receive all the latest and most relevant information. The Organising Committee of Rio 2016 has also been in close contact with all relevant authorities.

The Rio2016 Organising Committee has informed us that the Brazilian health authorities have been taking and will continue to take significant steps to improve the situation in Lagoa. However, as we do at all FISA Events, during the 2015 World Junior Championships and the 2016 Olympic and Paralympic Regattas the Sports Medicine Commission strongly recommends that teams:

- Engage in good hygiene practices at all times including regular hand washing or hand sanitization before and after meals, and after visits to sanitary areas;
- Avoid intentional or inadvertent immersion, including splashing;
- Avoid drinking or ingesting any water from the regatta venue unless it is bottled and sealed ;
- Report any symptoms of diarrhoea (≥ 6 loose bowel movements in 24 hours, bloody diarrhoea, or diarrhoea which lasts >48 hours), fever $> 100.4^{\circ}\text{F}$ or 38°C , and/or severe abdominal pain to the FISA Sports Medicine Commission representative.

Based on these actions of the Rio health authorities and the recommendations above, regular reviews of statistics on water quality with experts and the regular testing of the water quality by the state and city authorities, the FISA Executive Committee has accepted the data provided which indicates the athletes will not have increased health risk through incidental water contact by competing at the Lagoa. The FISA Executive Committee continues to monitor the situation.